Listing of Claims

1   Claim 1 (Previously Presented): A method of providing differentiated services for IP

2   packets transported on an asynchronous transfer mode (ATM) backbone, said method

3   comprising:

4   provisioning a first switched virtual circuit (SVC) and a second SVC on said ATM

5   backbone, each of said first SVC and said second SVC being provisioned as a unicast point-

6   to-point virtual circuit terminating between same end devices;

7   receiving an IP packet;

8   determining whether to send said IP packet on said first SVC or said second SVC

9   according to services desired to be provided for said IP packet, wherein said determining

10   comprises examining a header of said IP packet and wherein said services desired for said

11   IP packet being based on said header, said determining also comprising maintaining a data

12   structure indicating a specific one of said first SVC and said second SVC on which to send

13   IP packets having a specific precedence value in a type of service (TOS) field in said header;

14   and

15   sending said IP packet on the determined one of said first SVC or said second SVC,

16   wherein said IP packet is sent on either said first SVC or said second SVC according

17   to the data stored in said data structure.

1   Claim 2: (Canceled)

1   Claim 3 (Currently Amended): The method of claim 1 2, wherein said data structure

2   comprises a table.

1   Claim 4 (Original): The method of claim 3, wherein said table indicates that a

2   plurality of precedence values are to be mapped to the same SVC.

1   Claim 5 (Original): The method of claim 3, wherein said provisioning comprises

2   initiating a set up request from a first router to a second router to set up said first SVC,

3   wherein said first router and said second router interface directly with said ATM backbone,

4   wherein said set up request is sent only after reception of a first IP packet to be sent on said

5   first SVC, wherein said first SVC is provisioned between said first router and said second

6   router.

1   Claim 6 (Original): The method of claim 5, wherein said second router also sends on

2   said first SVC the IP packets having the same precedence value as said first IP packet.

1   Claim 7 (Previously Presented): The method of claim 6, further comprising sending

2   a precedence data from said first router to said second router, wherein said precedence data

3   indicates that the precedence value of said first IP packet is to be associated with said first

4   SVC such that said second router can send packets with the same precedence value on said

5   first SVC.

1   Claim 8 (Previously Presented): The method of claim 7, wherein said precedence data

2   is contained in a signaling set up message representing said set up request.

1   Claim 9 (Original): The method of claim 8, wherein said precedence data is encoded

2   in a broadband higher layer information (BHLI) information element (IE) contained in said

3   signaling set up message.

1   Claim 10 (Original): The method of claim 9, wherein each of said first router and said

2   second router comprises an edge router.

1   Claim 11 (Previously Presented): The method of claim 5, wherein said table stores an

2   IP address, a network service access point (NSAP) of said second router, a precedence value

3   contained in said header, and a SVC identifier in each row.

1   Claims 12 -15 (Canceled)

1   Claim 16 (Currently Amended): A router for providing differentiated services for IP

2   packets transported on an asynchronous transfer mode (ATM) backbone, said router

3   comprising:

4   means for provisioning a first switched virtual circuit (SVC) and a second SVC on

5   said ATM backbone, each of said first SVC and said second SVC being provisioned as a

6   unicast point-to-point virtual circuit terminating between same end devices;

7   means for receiving an IP packet;

8   means for determining whether to send said IP packet on said first SVC or said second

9   SVC according to services desired to be provided for said IP packet, wherein said means for

10   determining examines a header of said IP packet to determine whether to send said IP packet

11   on said first SVC or said second SVC and wherein said services desired for said IP packet

12   being based on said header, wherein said means for determining further maintains a data

13   structure indicating a specific one of said first SVC and said second SVC on which to send

14   IP packets having a specific precedence value in a type of service (TOS) field in said header;

15   and

16   means for sending said IP packet on the determined one of said first SVC or said

17   second SVC,

18   wherein said IP packet is sent on either said first SVC or said second SVC according

19   to the data stored in said data structure.

1   Claim 17: (canceled)

1   Claim 18 (Currently Amended): The router of claim 16 17, wherein said data structure

2   comprises a table.

1   Claim 19 (Original): The router of claim 18, wherein said table indicates that a

2   plurality of precedence values are to be mapped to the same SVC.

1   Claim 20 (Previously Presented): The router of claim 18, wherein said means for

2   provisioning initiates a set up request to another router to set up said first SVC, wherein said

3   set up request is sent only after reception of a first IP packet to be sent on said first SVC,

4   wherein said first SVC is provisioned to terminate at said another router.

1   Claim 21 (Original): The router of claim 20, wherein said another router also sends

2   on said first SVC the IP packets having the same precedence value as said first IP packet.

1   Claim 22 (Previously Presented): The router of claim 21, further comprising means

2   for sending a precedence data to said another router, wherein said precedence data indicates

3   that the precedence value of said first IP packet is to be associated with said first SVC such

4   that another router can send packets with the same precedence value on said first SVC.

1   Claim 23 (Previously Presented): The router of claim 22, wherein said precedence

2   data is encoded in a broadband higher layer information (BHLI) information element (IE)

3   contained in a Signaling set up message.

1   Claims 24 - 26 (Canceled)

1   Claim 27 (Currently Amended): A computer readable medium carrying one or more

2   sequences of instructions for causing a router to provide differentiated service to IP packets

3   transported on an asynchronous transfer mode (ATM) backbone, wherein execution of said

4   one or more sequences of instructions by one or more processors contained in said router

5   causes said one or more processors to perform the actions of:

6   provisioning a first switched virtual circuit (SVC) and a second SVC on said ATM

7   backbone, each of said first SVC and said second SVC being provisioned as a unicast point-

8   to-point virtual circuit terminating between same end devices;

9   receiving an IP packet;

10   determining whether to send said IP packet on said first SVC or said second SVC

11   according to services desired to be provided for said IP packet, wherein said determining

12   comprises examining a header of said IP packet and wherein said services desired for said

13   IP packet being based on said header, wherein said determining further comprises

14   maintaining a <u>data structure</u> ~~table~~ indicating a specific one of said first SVC and said second

15   SVC on which to send IP packets having a specific precedence value in a type of service

16   (TOS) field in said header, wherein said IP packet is sent on either said first SVC or said

17   second SVC according to the data stored in said table; and

18   sending said IP packet on the determined one of said first SVC or said second SVC,

            wherein said IP packet is sent on either said first SVC or said second SVC according

to the data stored in said data structure.

1   Claim 28 : (Canceled)

1   Claim 29 (Currently Amended): The computer readable medium of claim 27 28,

2   wherein said data structure comprises a table.

1   Claim 30 (Original): The computer readable medium of claim 29, wherein said table

2   indicates that a plurality of precedence values are to be mapped to the same SVC.

1   Claim 31 (Original): The computer readable medium of claim 29, wherein said

2   provisioning comprises initiating a set up request to another router to set up said first SVC,

3   wherein said first router and said another router interface directly with said ATM backbone,

4   wherein said set up request is sent only after reception of a first IP packet to be sent on said

5   first SVC, wherein said first SVC is provisioned between said first router and said another

6   router.

1   Claim 32 (Original): The computer readable medium of claim 31, wherein said

2   another router also sends on said first SVC the IP packets having the same precedence value

3   as said first IP packet.

1   Claim 33 (Previously Presented): The computer readable medium of claim 32, further

2   comprising sending a precedence data to said another router, wherein said precedence data

3   indicates that the precedence value of said first IP packet is to be associated with said first

4   SVC such that another router can send packets with the same precedence value on said first

5   SVC.

1   Claim 34 (Original): The computer readable medium of claim 33, wherein said

2   precedence data is encoded in a broadband higher layer information (BHLI) information

3   element (IE) contained in a signaling set up message.

1   Claim 35 (Previously Presented): The computer readable medium of claim 33,

2   wherein said table stores an IP address, a network service access point (NSAP) of said second

3   router, a precedence value contained in said header, and a SVC identifier in each row.

1   Claims 36 - 38 (Canceled)

1   Claim 39 (Previously Presented): A router for providing differentiated services for IP

2   packets transported on an asynchronous transfer mode (ATM) backbone, said router

3   comprising:

4   an inbound interface receiving an IP packet;

5   a memory storing a data structure indicating that a first switched virtual circuit (SVC)

6   and a second SVC are provisioned on said ATM backbone, each of said first SVC and said

7   second SVC being provisioned as a unicast point-to-point virtual circuit terminating between

8   same end devices;

9   an encapsulator determining whether to send said IP packet on said first SVC or said

10   second SVC according to services desired to be provided for said IP packet, said encapsulator

11   generating a plurality of cells designed for transmission on the determined one of said first

12   SVC or said second SVC, wherein said ATM encapsulator examines a header of said IP

13   packet to determine whether to send said IP packet on said first SVC or said second SVC and

14   wherein said services desired for said IP packet being based on said header, wherein said data

15   structure indicates a specific one of said first SVC and said second SVC on which to send IP

16   packets having a specific precedence value in a type of service (TOS) field in said header;

17   and

18   an output interface sending said plurality of cells on said ATM backbone.

1   Claim 40 (Canceled)

1   Claim 41 (Currently Amended): The router of claim 39 40, wherein said data structure

comprises a table.

1   Claim 42 (Original): The router of claim 41, wherein said table indicates that a

2   plurality of precedence values are to be mapped to the same SVC.

1   Claim 43 (Previously Presented): The router of claim 42, further comprising a

2   signaling block for initiating a set up request to another router to set up said first SVC,

3   wherein said set up request is sent only after reception of a first IP packet to be sent on said

4   first SVC, wherein said first SVC is provisioned to terminate at said another router.

1   Claim 44 (Original): The router of claim 43, wherein said another router also sends

2   on said first SVC the IP packets having the same precedence value as said first IP packet.

1   Claim 45 (Previously Presented): The router of claim 44, wherein said signaling block

2   sends a precedence data to said another router, wherein said precedence data indicates that

3   the precedence value of said first IP packet is to be associated with said first SVC such that

4   another router can send packets with the same precedence value on said first SVC.

1   Claim 46 (Original): The router of claim 45, wherein said precedence data is encoded

2   in a broadband higher layer information (BHLI) information element (IE) contained in a

3   signaling set up message.

1   Claim 47 (Previously Presented): The router of claim 41, wherein said SVC table

2   stores a network service access point (NSAP) address and IP address of an edge router at the

3   next hop associated with each SVC, wherein said encapsulator sending as a key to said table

4   a IP address of an edge router at the next hop and a precedence value in each received IP

5   packet to determine whether to send said IP packet on said first SVC or said second SVC.

1   Claims 48 - 51: (Canceled)

1   Claim 52 (Previously Presented): The method of claim 1, wherein said ATM

2   backbone comprises a plurality of switches, wherein said provisioning includes at least one

3   additional switch between said same end devices for said first SVC, wherein said additional

4   switch is contained in said plurality of switches.

1   Claim 53 (Previously Presented): The router of claim 16, wherein said ATM backbone

2   comprises a plurality of switches, wherein said means for provisioning includes at least one

3   additional switch between said same end devices for said first SVC, wherein said additional

4   switch is contained in said plurality of switches.

1   Claim 54 (Previously Presented): The computer readable medium of claim 27,

2   wherein said ATM backbone comprises a plurality of switches, wherein said provisioning

3   includes at least one additional switch between said same end devices for said first SVC,

4   wherein said additional switch is contained in said plurality of switches.

1   Claim 55 (Previously Presented): The router of claim 39, wherein said ATM backbone

2   comprises a plurality of switches, wherein said first SVC contains at least one additional

3   switch between said same end devices, wherein said additional switch is contained in said

4   plurality of switches.

1   Claim 56 (New): A method of providing differentiated services for IP packets

2   transported on an asynchronous transfer mode (ATM) backbone, said method comprising:

3   provisioning a first switched virtual circuit (SVC) and a second SVC on said ATM

4   backbone, each of said first SVC and said second SVC being provisioned as a unicast point-

5   to-point virtual circuit terminating between same end devices,

6   receiving an IP packet;

7   storing in each row of a table an IP address, a network service access point (NSAP)

8   of a second router comprised in said end devices, a precedence value contained in a header

9   in said IP packet, and a SVC identifier;

10   determining whether to send said IP packet on said first SVC or said second SVC

11   according to services desired to be provided for said IP packet and the content of the rows

12   of said table, wherein said determining comprises examining said header of said IP packet

13   and wherein said services desired for said IP packet being based on said header, a row of said

14   table indicating a specific one of said first SVC and said second SVC on which to send IP

15   packets having a specific precedence value in a type of service (TOS) field in said header;

16   and

17   sending said IP packet on the determined one of said first SVC or said second SVC,

18   wherein said IP packet is sent on either said first SVC or said second SVC according to the

19   data stored in said table.

1   Claim 57 (New): The method of claim 56, wherein said table indicates that a plurality

2   of precedence values are to be mapped to the same SVC.

1   Claim 58 (New): The method of claim 56, wherein said provisioning comprises

2   initiating a set up request from a first router comprised in said end devices to said second

3   router to set up said first SVC, wherein said first router and said second router interface

4   directly with said ATM backbone, wherein said set up request is sent only after reception of

5   a first IP packet to be sent on said first SVC, wherein said first SVC is provisioned between

6   said first router and said second router.

1   Claim 59 (New): The method of claim 58, wherein said second router also sends on

2   said first SVC the IP packets having the same precedence value as said first IP packet.

1   Claim 60 (New): The method of claim 59, further comprising sending a precedence

2   data from said first router to said second router, wherein said precedence data indicates that

3   the precedence value of said first IP packet is to be associated with said first SVC such that

4   said second router can send packets with the same precedence value on said first SVC.

1   Claim 61 (New): A computer readable medium carrying one or more sequences of

2   instructions for causing a router to provide differentiated services to IP packets transported

3   on an asynchronous transfer mode (ATM) backbone, wherein execution of said one or more

4   sequences of instructions by one or more processors contained in said router causes said one

5   or more processors to perform the actions of:

6   provisioning a first switched virtual circuit (SVC) and a second SVC on said ATM

7   backbone, each of said first SVC and said second SVC being provisioned as a unicast point-

8   to-point virtual circuit terminating between said router and another router,

9   receiving an IP packet;

10   storing in each row of a table an IP address, a network service access point (NSAP)

11   of said another router, a precedence value contained in a header in said IP packet, and a SVC

12   identifier;

13   determining whether to send said IP packet on said first SVC or said second SVC

14   according to services desired to be provided for said IP packet and the content of the rows

15   of said table, wherein said determining comprises examining said header of said IP packet

16   and wherein said services desired for said IP packet being based on said header, a row of said

17   table indicating a specific one of said first SVC and said second SVC on which to send IP

18   packets having a specific precedence value in a type of service (TOS) field in said header;

19   and

20   sending said IP packet on the determined one of said first SVC or said second SVC,

21   wherein said IP packet is sent on either said first SVC or said second SVC according to the

22   data stored in said table.

1   Claim 62(New): The computer readable medium of claim 61, wherein said table

2   indicates that a plurality of precedence values are to be mapped to the same SVC.

1   Claim 63 (New): The computer readable medium of claim 61, wherein said

2   provisioning comprises initiating a set up request from said router to said another router to

3   set up said first SVC, wherein said router and said another router interface directly with said

4   ATM backbone, wherein said set up request is sent only after reception of a first IP packet

5   to be sent on said first SVC, wherein said first SVC is provisioned between said router and

6   said another router.

1   Claim 64 (New): The computer readable medium of claim 63, wherein said another

2   router also sends on said first SVC the IP packets having the same precedence value as said

3   first IP packet.

1   Claim 65 (New): The computer readable medium of claim 64, further comprising

2   sending a precedence data from said router to said another router, wherein said precedence

3   data indicates that the precedence value of said first IP packet is to be associated with said

4   first SVC such that said another router can send packets with the same precedence value on

5   said first SVC.

1   Claim 66(New): A router for providing differentiated services for IP packets

2   transported on an asynchronous transfer mode (ATM) backbone, said router comprising:

3   an inbound interface receiving an IP packet;

4   a memory storing a table, each row of said table storing an IP address, a network

5   service access point (NSAP) of another router, a precedence value contained in a header in

6   said IP packet, and a SVC identifier in each row, said table indicating that a first switched

7   virtual circuit (SVC) and a second SVC are provisioned on said ATM backbone, each of said

8   first SVC and said second SVC being provisioned as a unicast point-to-point virtual circuit

9   terminating between said router and said another router;

10   an encapsulator determining whether to send said IP packet on said first SVC or said

11   second SVC according to services desired to be provided for said IP packet, said encapsulator

12   generating a plurality of cells designed for transmission on the determined one of said first

13   SVC or said second SVC, wherein said ATM encapsulator examines said header of said IP

14   packet to determine whether to send said IP packet on said first SVC or said second SVC and

15   wherein said services desired for said IP packet being based on said header, wherein said

16   table indicates a specific one of said first SVC and said second SVC on which to send IP

17   packets having a specific precedence value in a type of service (TOS) field in said header;

18   and

19   an output interface sending said plurality of cells on said ATM backbone.

1   Claim 67 (New): The router of claim 66, wherein said table indicates that a plurality

2   of precedence values are to be mapped to the same SVC.

1   Claim 68 (New): The router of claim 66, further comprising a signaling block for

2   initiating a set up request to said another router to set up said first SVC, wherein said set up

3   request is sent only after reception of a first IP packet to be sent on said first SVC, wherein

4   said first SVC is provisioned to terminate at said another router.

1   Claim 69 (New): The router of claim 68, wherein said another router also sends on

2   said first SVC the IP packets having the same precedence value as said first IP packet.

1   Claim 70 (New): The router of claim 69, wherein said signaling block sends a

2   precedence data to said another router, wherein said precedence data indicates that the

3   precedence value of said first IP packet is to be associated with said first SVC such that said

4   another router can send packets with the same precedence value on said first SVC.